

Isolation and Characterization of Gram Negative Biosurfactant Producing Bacteria from Meghan Wetland in Iran

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Background & Objectives: Biosurfactants are surface active compounds which are produced by some microorganisms. These types of compounds have different advantages such as: low toxicity, high biodegradability, low irritancy and compatibility with human skin.

Methods: The present study was conducted to isolate gram negative bacteria with capability to produce biosurfactant from Meghan wetland in Iran. For this purpose 100 gr soil has been collected from Meghan wetland and the microorganism isolated using serial dilution techniques. Then the isolates were evaluated using oil spreading technique and hemolysis test. The selected microorganisms were identified and characterized using biochemical tests and they were evaluated for detection of biosurfactant by TLC.

Results: The results obtained from this study indicated that out of 7 different types of colonies 5 of them were gram negative and they were characterized as *Enterobacter*, *Salmonella*, *Aeromonas*, *Pasteurella* and *Arizona*. On the other hand Oil spreading technique indicated that the microorganisms have capability to produce biosurfactant. In addition presence of red spots due to ninhydrine reagent from extracted biosurfactant on TLC plates indicated that the structure of biosurfactant could be lipopeptide.

Conclusion: The present study illustrated that this area of investigation could be a suitable place for isolation of microorganisms with capability to produce biosurfactant and it could be use for further study and applications.

Keywords: Gram Negative Bacteria; Biosurfactant; Lipopeptide